

Ashutosh Pochamreddy

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EDUCATION

Virginia Tech

Masters in Computer Science

Blacksburg, VA

GPA: 3.9 | Dec 2024

VIT, Vellore

Bachelors in Computer Science and Engineering

Vellore, TN

GPA: 8.6 | May 2022

PUBLICATIONS

IntelliSMART: Intelligent Semantic Machine - Assisted Research Tool: [\(link\)](#)

Aug 2024

- Published in ACM Advances in Social Networks Analysis and Mining(ASONAM conference 2024, Italy)

Procedure Evaluation using Language Modelling (In Progress)

Blacksburg, VA

- Generated a synthetic dataset of procedures using chain-of-thought prompting on GPT-4 and fine-tuned LLama-7B, Mistral-7B, and T5-13B models to identify erroneous steps.

PROFESSIONAL EXPERIENCE

Shell

Software Development Engineer

Bangalore, India

Aug 2022 – Sep 2023

- Designed and developed full-stack applications using Java (Java 17), Spring Boot, Hibernate, and React.js, delivering high-performance microservices-based self-checkout systems.
- Developed RESTful APIs to support self-checkout POS systems, enhancing transaction processing efficiency by 30%.
- Implemented real-time monitoring and alerting using Prometheus, Grafana, and PagerDuty, reducing incident resolution time by 40%.
- Integrated Elasticsearch to enable fast and scalable data retrieval for fraud detection and transaction analytics.
- Containerized microservices using Docker and deployed them on AWS ECS and Kubernetes.
- Developed a real-time event streaming pipeline using Apache Kafka, achieving sub-20ms latency for processing transactions..
- Designed and implemented an AI-based security assessment tool using LLMs (GPT-based CNN models) to analyze API payloads for vulnerability detection, improving security compliance by 90%.

Ninjacart

Software Engineer

Remote

Feb 2022 – Jul 2022

- Developed and deployed a full-stack application using Spring Boot, Spring Data JPA, Node.js, React.js, Redux, and TypeScript, enhancing performance by 20% and optimizing UI/UX.
- Designed and optimized database queries using Hibernate ORM and PostgreSQL, reducing API response times by 35%.
- Built a cloud-native microservices architecture leveraging Spring Boot, Kafka, and AWS Lambda for efficient event processing.
- Implemented Kubernetes clusters on AWS EKS to manage and scale containerized applications, ensuring high availability.
- Developed reusable React components following Material UI and Storybook, streamlining UI consistency and reducing development time by 20%..

Virginia Tech

Research Assistant

Blacksburg, Virginia

Sep 2023 – Aug 2024

- Developing and optimizing deep learning models for LLM-based natural language query processing, improving SQL query generation accuracy.
- Developing a SQL practice platform with Python (Flask), PostgreSQL, WebSockets, OAuth 2.0, and Docker, featuring real-time collaboration, automated testing, progress tracking, and analytics visualized with Chart.js, deploying on AWS.

Apr 2024 – Oct 2024

Virginia Tech

Graduate Teaching Assistant

Blacksburg, Virginia

Aug 2024 – Present

- Guiding students in deploying and managing cloud-based applications on AWS (Lambda, EC2, S3, RDS, IAM, and CodePipeline) while teaching DevOps best practices, including CI/CD automation using Jenkins, Terraform, and Kubernetes.

PROJECTS

Semantic Processing LLM for Academia

- Enhanced user query accuracy by 15% using Gemini-Pro for embedding generation. Fine-tuned arXiv data with GPT-3 for optimized sentence embeddings and indexed them with Annoy for efficient document retrieval based on content similarity.

CRM System

- Developed CRM features including lead management, contact management, opportunity tracking, and reporting using Go. Leveraged PostgreSQL for over 1M records, gRPC to cut data latency by 40%, and Kubernetes for orchestration

Optimizing Web Application Deployment on AWS Cloud

- Designed a resilient AWS cloud architecture with EC2, S3, RDS, and Lambda, optimizing resource usage by 40%, achieving 99.99% uptime, and ensuring high availability with secure REST API endpoints via API Gateway.

SKILLS

Languages: JAVA, Python, C++, JavaScript, PHP, SQL, Bash, GraphQL, HTML, CSS

Frameworks: Spring Boot, React, Angular, Django, Flask, NodeJS, TensorFlow, Keras

Tools: Kubernetes, Docker, GIT, PostgreSQL, MySQL, Terraform

Platforms: AWS, GCP, Azure, Linux, Web, Windows